What is claimed is:

3.

geomechanical maximum number of fractures.

- A method of optimizing a number, placement and size of fractures in a 1. subterranean formation, comprising the steps of:
- (a) determining one or more geomechanical stresses induced by each fracture based on the dimensions and location of each fracture;
- (b) determining a geomechanical maximum number of fractures based on the geomechanical stresses induced by each of the fractures; and
- (c) determining a predicted stress field based on the geomechanical stresses induced by each fracture.
- 2. The method according to claim 1, wherein steps (a), (b), and (c) are performed prior to creating any of the fractures in the subterranean formation.
- The method according to claim 1, further comprising the steps of: determining a cost-effective number of fractures; determining an optimum number of fractures, where the optimum number of fractures is the maximum cost-effective number of fractrues that does not exceed the
- 4. The method according to claim 1, further comprising the step of spacing the fractures a uniform distance from each other.
- 5. The method according to claim 1, further comprising the step of creating the fractures with a uniform size.
 - 6. The method according to claim 1, further comprising the steps of: creating one or more fractures in the subterrenan formation; and repeating steps (a), (b), and (c) after each fracture is created.
- 7. The method according to claim 6, wherein the repeating step comprises the steps of gathering and analyzing real-time fracturing data for each fracture created.

- 8. The method according to claim 7, wherein a well is placed in the subterrenan formation, the well comprising a wellhead, a tubing, and a well bore, the well bore comprising a downhole section, and wherein the gathering of real-time fracturing data comprises the steps of:
 - (i) measuring a fracturing pressure while creating a current fracture;
 - (ii) measuring a fracturing rate while creating the current fracture; and
 - (iii) measuring a fracturing time while creating the current fracture.
- 9. The method according to claim 8, wherein the measuring of fracturing pressure is accomplished using one or more transducers located at the wellhead.
- 10. The method of claim 8, wherein the measuring of fracturing pressure is accomplished using one or more transducers located down hole.
- 11. The method according to claim 8, wherein the fracturing pressure is measured in the tubing.
- 12. The method according to claim 7, wherein analyzing of real-time fracturing data comprises the steps of:

determining a new stress field, based on the real-time fracturing data; and comparing the new stress field with the predicted stress field.

- 13. The method according to claim 12, further comprising the step of decreasing the number of fractures in response to the real-time fracturing data.
- 14. The method according to claim 12, further comprising the step of increasing the distance between the fractures in response to the real-time fracturing data.
- 15. The method according to claim 12, further comprising the step of adjusting the size of the fractures in response to the real-time fracturing data.
- 16. The method according to claim 1, wherein the subterranean formation comprises a well bore comprising a generally vertical portion.
- 17. The method according to claim 16, wherein the well bore further comprises one or more laterals.

- 18. A computer implemented method for optimizing a number, placement and size of fractures in a subterranean formation, comprising the steps of:
- (a) determining one or more geomechanical stresses induced by each fracture based on the dimensions and location of each fracture;
- (b) determining a geomechanical maximum number of fractures based on the geomechanical stresses induced by each of the fractures; and
- (c) determining a predicted stress field based on the geomechanical stresses induced by each fracture.
- 19. The method according to claim 18, wherein steps (a), (b), and (c) are performed prior to creating any of the fractures in the subterranean formation.
 - 20. The method according to claim 18, further comprising the steps of: determining a cost-effective number of fractures;

determining an optimum number of fractures, where the optimum number of fractures is the maximum cost-effective number of fractures that does not exceed the geomechanical maximum number of fractures.

- 21. The method according to claim 18, further comprising the steps of: creating one or more fractures in the subterrenan formation; and repeating steps (a), (b), and (c) after each fracture is created.
- 22. The method according to claim 21, wherein the repeating step comprises the steps of gathering and analyzing real-time fracturing data for each fracture created.
- 23. The method according to claim 22, wherein analyzing of real-time fracturing data comprises the steps of:

determining a new stress field, based on the real-time fracturing data; and comparing the new stress field with the predicted stress field.

- 24. A method of fracturing a subterrenan formation, comprising the step of:
 optimizing a number, placement and size of fractures in the subterranean
 formation, the step of optimizing comprising:
- (a) determining one or more geomechanical stresses induced by each fracture based on the dimensions and location of each fracture;
- (b) determining a geomechanical maximum number of fractures based on the geomechanical stresses induced by each of the fractures; and
- (c) determining a predicted stress field based on the geomechanical stresses induced by each fracture.
- 25. The method according to claim 24, wherein substeps (a), (b), and (c) of the optimizing step are performed prior to creating any of the fractures in the subterranean formation.
- 26. The method according to claim 24, where in the optimizing step further comprises the substeps of:

determining a cost-effective number of fractures;

determining an optimum number of fractures, where the optimum number of fractures is the maximum cost-effective number of fractures that does not exceed the geomechanical maximum number of fractures.

- 27. The method according to claim 24, further comprising the steps of: creating one or more fractures in the subterrenan formation; and repeating substeps (a), (b), and (c) of the optimizing step after each fracture is created.
- 28. The method according to claim 27, wherein the repeating step further comprises the steps of gathering and analyzing real-time fracturing data for each fracture created.
- 29. The method according to claim 28, wherein analyzing of real-time fracturing data comprises the steps of:

determining a new stress field, based on the real-time fracturing data; and comparing the new stress field with the predicted stress field.